

#### U.S. ENVIRONMENTAL PROTECTION AGENCY

Reregistration (under FIFRA, as amended)

Office of Pesticide Programs Registration Division (7505P) 1200 Pennsylvania Ave., N.W. Washington, D.C. 20460

74530-89

Date of Issuance:

EPA Reg. Number:

11/21/18

NOTICE OF PESTICIDE: Term of Issuance: X Registration

Conditional

Name of Pesticide Product:

FEARLESS 5.6 L Herbicide

Name and Address of Registrant (include ZIP Code):

HELM Agro US, Inc. 401 E. Jackson St., Suite 1400 Tampa, FL 33602

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A). You must comply with the following conditions:

1. Submit and/or cite all data required for registration/registration/registration review of your product under FIFRA when the Agency requires all registrants of similar products to submit such

Signature of Approving Official: Date: Emily Schmid 11/21/18 Emily Schmid, Acting Product Manager 25 Herbicide Branch, Registration Division (7505P)

EPA Form 8570-6

Page 2 of 2 EPA Reg. No. 74530-89 Decision No. 543132

2. You are required to comply with the data requirements described in the DCI identified below:

Acetochlor GDCI-121601-1660

You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCI listed above, you may contact the Chemical Review Manager in the Pesticide Reevaluation Division: <a href="http://iaspub.epa.gov/apex/pesticides/f?p=chemicalsearch:1">http://iaspub.epa.gov/apex/pesticides/f?p=chemicalsearch:1</a>

- 3. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, "EPA Reg. No. 74530-89."
- 4. Submit one copy of the final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If you fail to satisfy these data requirements, EPA will consider appropriate regulatory action including, among other things, cancellation under FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

• Basic CSF dated 07/26/2018

If you have any questions, please contact Beth Benbow via email at benbow.bethany@epa.gov.

Enclosure

# RESTRICTED USE PESTICIDE

Due to ground and surface water concerns. For retail sale to and use only by Certified Applicators, or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

# **FEARLESS 5.6L Herbicide**

ATRAZINE ACETOCHLOR	GROUP	5	15	HERBICIDES	l
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Preemergence herbicide for weed control in Field Corn, Production Seed Corn, Silage Corn, Popcorn and Miscanthus or other non-food perennial bioenergy crops.

# **ACTIVE INGREDIENTS:\***

Acetochlor, 2-chloro-N-ethoxymethyl-N-{2-ethyl-6-methylphenyl)acetamide	:33.4%
Atrazine, 2-chloro-4-(ethylamino)-6-(isopropylamino)s-triazine and related triazines	26.9%
OTHER INGREDIENTS:	39.7%
	100.0%

<sup>\*</sup>Contains 372 grams/liter or 3.1 pounds/gallon of acetochlor and 300 grams/liter or 2.5 pounds/gallon of atrazine and related compounds.

EPA Reg. No. 74530-xx EPA Establishment Number: xxxxx Net Contents:

Not for Sale, Sale Into, Distribution and/or Use in Nassau and Suffolk Counties of New York State. Read the entire label before using this product.

Use only according to label instructions.

Read "LIMIT OF WARRANTY AND LIABILITY" before buying or using. If terms are not acceptable, return at once unopened.

THIS IS AN END-USE PRODUCT.

HELM AGRO DOES NOT INTEND AND HAS NOT REGISTERED IT FOR REFORMULATION. SEE INDIVIDUAL CONTAINER LABEL FOR REPACKAGING LIMITATIONS.

# **CONTENTS**

# PRODUCT INFORMATION

- 1 1.0 **INGREDIENTS**
- 2 2.0 IMPORTANT PHONE NUMBERS
- 3 3.0 PRECAUTIONARY STATEMENTS
  - 3.1 Hazards to Humans and Domestic Animals
  - 3.2 Environmental Hazards

# **DIRECTIONS FOR USE**

4 4.0 STORAGE AND DISPOSAL

# ACCEPTED

11/21/2018

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under

EPA Reg. No. 74530-89

5	5.0 5.1	PRODUCT INFORMATION Use Restrictions
6	6.0	WEED RESISTANCE MANAGEMENT
7	7.0	SOIL TEXTURE
8	8.0 8.1 8.2 8.3	MIXING, SPRAYING AND HANDLING INSTRUCTIONS Equipment Cleaning & Repair Sprayer Compatibility Standard Sprayable Fluid Fertilizer Compatibility Test
9	9.0 9.1 9.2 9.3	APPLICATION SYSTEMS Ground Broadcast Treatment Ground Band Treatment Application with Dry Bulk Fertilizer
10	10.1 10.2 10.3 10.4	APPLICATION TIMING AND METHODS Early Preplant Surface Application Preplant Incorporation Application Preemergence Surface Application Postemergence Surface Application Cultivation Information
11	11.1 11.2 11.3	WEEDS CONTROLLED Annual Grasses Annual Broadleaves Annual Grasses Partially Controlled Annual Broadleaves Partially Controlled
12	12.1	CONSERVATION OR MINIMUM TILLAGE SYSTEMS  At-Planting Applications 12.1.1 Additional Preemergence Control Control or Suppression of Emerged Weeds 12.2.1 Glyphosate Agricultural Herbicides 12.2.2 Paraquat Herbicides 12.2.3 2,4-D Early Preplant Application 12.3.1 FEARLESS 5.6 L Herbicide 12.3.2 FEARLESS 5.6 L Herbicide following Princep
13		CONVENTIONAL TILLAGE FEARLESS 5.6 L Herbicide
14	14.0 14.1 14.2	<b>TANK-MIXUTRES</b> FEARLESS 5.6 L Herbicide Tank-Mixtures for Preemergence Use in Corn FEARLESS 5.6 L Herbicide Tank-Mixtures for Postemergence Use in Corn
15	15.0	MISCANTHUS AND OTHER NON-FOOD PERENNIAL BIOENERGY CROPS
16	16.0	LIMITATION OF WARRANTY AND LIABILITY

# PRODUCT INFORMATION

# 1.0 INGREDIENTS

# **ACTIVE INGREDIENTS:\***

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Atrazine, 2-chloro-4-(ethylamino)-6-(isopropylamino)s-triazine and related triazines	
OTHER INGREDIENTS:	39.7%
	100.0%

<sup>\*</sup>Contains 372 grams/liter or 3.1 pounds/gallon of acetochlor and 300 grams/liter or 2.5 pounds/gallon of atrazine and related compounds.

# 2.0 IMPORTANT PHONE NUMBERS

IN CASE OF AN EMERGENCY INVOLVING THIS HERBICIDE PRODUCT, OR FOR MEDICAL ASSISTANCE, CALL COLLECT, DAY OR NIGHT, CHEMTREC 1-800-424-9300

# 3.0 PRECAUTIONARY STATEMENTS

3.1 Hazards to Humans and Domestic Animals

# Keep out of reach of children CAUTION!

HARMFUL IF SWALLOWED OR INHALED. CAUSES MODERATE EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION.

Avoid contact with skin, eyes, or clothing. Avoid breathing vapor or spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

FIRST AID				
IF SWALLOWED	<ul> <li>Call poison control center or doctor immediately for treatment advice.</li> <li>Have person sip a glass of water if able to swallow.</li> <li>Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>Do not give anything by mouth to an unconscious person.</li> </ul>			
IF INHALED	<ul> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> </ul>			
IF IN EYES	<ul> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> </ul>			
IF ON SKIN OR CLOTHING	<ul> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>Sensitized persons should avoid further contact and reuse of contaminated clothing.</li> </ul>			
	Hot Line Number			
Have the product co	ntainer or label with you when calling a poison control center or doctor, or going for			

# **Personal Protective Equipment (PPE)**

9300.

treatment. For chemical emergency: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-

**Mixers, loaders, applicators and other handlers must wear:** long-sleeved shirt and long pants, waterproof gloves, shoes plus socks, and a chemical-resistant apron when mixing/loading, cleaning up spills, or cleaning equipment, or otherwise exposed to the concentrate.

**Engineering Controls:** When handlers use enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing or other absorbent materials that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

IMPORTANT: When reduced PPE is worn because an enclosed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

# **User Safety Recommendations:**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

# 3.2 Environmental Hazards

Atrazine can travel (seep or leach) through soil and can enter groundwater which may be used as drinking water. Atrazine has been found in groundwater. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (groundwater) is close to the surface and where these soils are very permeable, i.e., well drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

Groundwater contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material

This product is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the groundwater is shallow, may result in groundwater contamination.

Acetochlor has properties that may result in surface water contamination via dissolved runoff and runoff erosion. Practices should be followed to minimize the potential for dissolved runoff and/or runoff erosion.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the groundwater is shallow, may result in groundwater contamination. On the following soil types, do not apply this product within 50 feet of any well where the depth to groundwater is 30 feet or less: sands with less than 3 percent organic matter; loamy sands with less than 2 percent organic matter; or sandy loams with less than 1 percent organic matter. See the figure for additional clarification.

# **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in any manner inconsistent with its labeling. This product can only be used in accordance with the Directions for Use on this label or in separately published Helm Agro Supplemental Labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulations.

ANY USE OF THIS PRODUCT IN AN AREA WHERE USE IS PROHIBITED IS A VIOLATION OF FEDERAL LAW. Before using this product, you must consult the Atrazine Watershed Information Center (AWIC) to determine whether the use of this product is prohibited in your watershed. AWIC can be accessed through <a href="https://www.atrazine-watershed.info">www.atrazine-watershed.info</a> or 1-866-365-3014. If use of this product is prohibited in your watershed, you may return this product to your point of purchase or contact Helm Agro for a refund.

Not for Sale, Sale Into, Distribution and/or Use in Nassau and Suffolk Counties of New York State.

This product must not be mixed or loaded within 50 feet of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. This product must not be applied within 66 feet of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 feet around natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66-foot buffer or setback from runoff entry points must be planted to crop, seeded with grass, or other suitable crop.

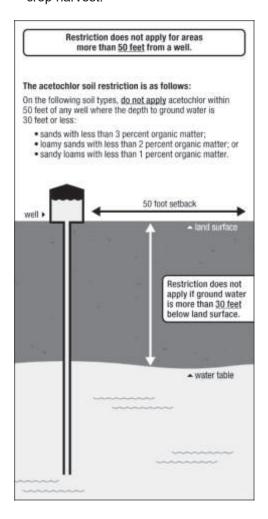
This product must not be mixed or loaded, or used within 50 feet of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 feet of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spill or equipment leaks, container or equipment rinse or washwater, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110 percent of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100 percent of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading sites.

States may have in effect additional requirements regarding well head setbacks and operational area containment.

To ensure protection of surface water from runoff through standpipes with tile-outlets in terraced fields, one of the following restrictions must be used in applying atrazine to tile-terraced fields containing standpipes:

- 1. Do not apply within 66 feet of standpipes in tile-outletted terraced fields.
- 2. Apply this product to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2 to 3 inches in the entire field.

Apply this product to the entire tile-outletted terraced field under a no-till practice only when a high
crop residue management practice is used. High crop residue management is described as a
crop management practice where little or no crop residue is removed from the field during or after
crop harvest.



# AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours. Exception: if the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, are: coveralls, shoes plus socks and chemical-resistant gloves, made of any waterproof material.

# 4.0 STORAGE AND DISPOSAL

# STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**PESTICIDE STORAGE:** Store pesticides away from food, pet food, feed, seed, fertilizers and veterinary supplies. Keep container closed to prevent spills and contamination.

**PESTICIDE DISPOSAL:** Open dumping is prohibited. Wastes resulting from the use of this product are toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of Federal law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to Federal, state, or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office.

# CONTAINER HANDLING:

**Non-refillable Container (five gallons or less):** Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke.

**Non-refillable Container (greater than five gallons):** Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke.

Refillable Container (greater than 55 gallons): Refillable container. Refill this container with acetochlor only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. For final disposal, offer for recycling or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

# 5.0 PRODUCT INFORMATION

This product will control yellow nutsedge and many annual grasses and broadleaf weeds listed in the "WEEDS CONTROLLED" section of this label. This product alone will not control emerged seedlings. This product may be applied either as a surface application before or after planting, or after crop emergence. This product may also be shallowly incorporated prior to planting to blend the herbicide treatment into the upper 1 to 2 inches of soil. Except for minimum or conservation tillage systems, the seedbed should be fine, firm and free of clods and trash.

Use of this product not consistent with this label may result in injury to persons, animals or crops, or other unintended consequences.

Read and carefully observe cautionary statements and all other information appearing on the labeling of all products used in mixtures and sequential treatments. Use according to the most restrictive label directions in the mixture.

**NOTE**: Use this product for weed control in corn only. CORN (NOT INCLUDING SWEET CORN), MILO (SORGHUM), OR SOYBEANS CAN BE PLANTED THE YEAR FOLLOWING THE USE OF THIS PRODUCT. IF SOYBEANS ARE TO BE PLANTED THE FOLLOWING YEAR, THERE IS THE POSSIBILITY OF CROP INJURY DUE TO CARRYOVER OF ATRAZINE.

#### 5.1 Use Restrictions

Not for Sale, Sale Into, Distribution and/or Use in Nassau and Suffolk Counties of New York State.

Do not use more than 3 lbs. acetochlor and 2.5 lbs. atrazine per acre per calendar year.

Do not flood irrigate to apply or incorporate this product.

Product must be used in a manner that will prevent back siphoning into wells, spills or improper disposal of excess pesticide, spray mixtures or rinsates.

Do not apply this product through any type of irrigation system, unless otherwise directed by approved supplemental labeling in possession of the user at the time of application.

Do not dispose excess pesticide, spray mixtures or rinsate directly to waters according to label use instructions or according to the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA regional office.

Do not apply under conditions that favor runoff or wind erosion of soil containing this product to non-target areas. To prevent off-site movement due to runoff or wind erosion:

- Do not treat powdery dry or light sandy soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
- Do not apply to impervious substrates such as paved or highly compacted surfaces or frozen
  or snow covered soils.
- Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

Do not apply this product using aerial application equipment, unless otherwise directed by approved supplemental labeling in possession of the user at the time of application.

Do not harvest field corn forage within 60 days of application (PHI = 60 days).

Flush sprayer with clean water after use.

# SPRAY DRIFT MANAGEMENT:

Do not apply when wind conditions aid drift to non-target sites. To minimize spray drift to non-target areas:

- Use low-pressure application equipment capable of producing a large droplet spray. Do not
  use nozzles that produce a fine droplet spray. Minimize drift by using sufficient spray volume
  to ensure adequate coverage with large droplet size sprays.
- Keep ground driven spray boom as low as possible above the target surface.
- Make application when the wind velocity favors on-target product deposition (approximately 3 to 10 miles per hour). Do not apply when wind velocity exceeds 15 miles per hour. Avoid application when gusts approach 15 miles per hour.
- Low humidity and high temperatures increase the likelihood of spray drift to sensitive areas.
   Avoid spraying during conditions of low humidity and/or high temperatures. Do not apply during inversion conditions.

# **ROTATIONAL CROPS:**

- If a crop treated with this product is lost, field corn, seed corn, silage corn, or popcorn may
  be replanted immediately. Do not exceed a total of 3.0 pounds per acre of acetochlor if
  additional product is applied.
- If applied after June 10, do not rotate to crops other than corn or sorghum the next year, or crop injury may occur.

- Rotate the next season to the following crops: corn (all types), cotton, sorghum or soybeans.
   Injury from atrazine may occur to soybeans planted the year following application on soils having a calcareous subsurface layer.
- In the High Plains and Intermountain regions of the West where rainfall is sparse and erratic or irrigation is required, use only when corn or sorghum is to follow corn.
- In Eastern parts of the Dakotas, Kansas, western Minnesota and Nebraska, do not rotate to soybeans if the rate applied to corn was more than 2.0 pounds active ingredient equivalent of atrazine or soybean injury may occur.
- Do not plant sugar beets, sunflower, potatoes, tobacco, dry beans or peas, spring-seeded small grains or small-seeded legumes the year following application, or injury from atrazine may occur.

# ROTATION TO NON-FOOD WINTER COVER CROPS

Following harvest of food crops treated with FEARLESS 5.6 L Herbicide, only non-food or non-feed winter cover crops (with the exception of wheat) may be planted. Do not graze or harvest rotational cover crops for food or animal feed for 18 months following the last application of FEARLESS 5.6 L Herbicide. This prohibition does not apply to wheat, which may be planted 4 months following the last application of FEARLESS 5.6 L Herbicide, or to nongrass animal feeds, which may be planted 9 months after the last application of FEARLESS 5.6 L Herbicide.

The maximum atrazine broadcast application rates for corn:

- If no atrazine was applied prior to corn emergence, apply a maximum of 2 pounds active ingredient per acre broadcast. If a postemergence treatment is required following an earlier herbicide application, the total atrazine applied may not exceed 2.5 pounds active ingredient per acre per calendar year.
- Apply a maximum of 2.0 pounds active ingredient per acre as a single preemergence application
  on soils that are not highly erodible or on highly erodible soils (as defined by the Natural
  Resources Conservation Service) if at least 30 percent of the soil is covered with plant residues,
  or
- Apply a maximum of 1.6 pounds active ingredient per acre as a single preemergence application
  on highly erodible soils (as defined by the Natural Resources Conservation Service) if less than
  30 percent of the surface is covered with plant residues; or 2.0 pounds active ingredient per acre
  if only applied postemergence.

When tank mixing or sequentially applying, atrazine or products containing atrazine to corn, the total pounds atrazine applied (pounds active ingredient per acre) must not exceed 2.5 pounds active ingredient per year.

# **6.0 WEED RESISTANCE MANAGEMENT**

ATRAZINE   ACCIOCILOR   OROGI   5   15   HERBICIDES	ATRAZINE	ACETOCHLOR	GROUP	5	15	HERBICIDES
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Atrazine and acetochlor, the active ingredients in this product, are Group 5 and Group 15 herbicides, respectively, based on the mechanism of action classification system of the Weed Science Society of America. Any weed population can contain plants naturally resistant to Group 5 or Group 15 herbicides. Weed species resistant to Group 5 or Group 15 herbicides may be effectively managed utilizing another herbicide from a different Group, (either alone or in a mixture according to label directions), by using other cultural or mechanical methods of weed control, or by a combination of the two.

Consult your local company representative, state cooperative extension agent, professional consultant or other qualified authority to determine appropriate actions for controlling specific resistant weeds.

# **Weed Management Practices**

Resistant populations arise when rare individual plants are uncontrolled by a normal dose of a given

herbicide under normal environmental conditions. In the absence of other control measures these individuals survive, produce seed, and eventually become the dominant biotype in the field through continuous selection. The best means of reducing this selection is to use diverse weed control practices such as multiple herbicides with different mechanisms of action for the target weed, and often in combination with various mechanical and cultural practices.

To minimize the occurrence of herbicide-resistant biotypes, including those resistant to Group 5, or Group 15 herbicides, implement the following weed management practice options that are practical to your situation. These management practices are applicable to reduce the spread of confirmed resistant biotypes (managing existing resistant biotypes) and to reduce the potential for selecting for resistance in new species (proactive resistance management).

- Use a diversified approach toward weed management focused on preventing weed seed production and reducing the number of weed seeds in the soil.
- Plant crops into fields that are as weed-free as possible and then keep them as weed-free as possible.
- Plant crop seed that is as weed-free as possible.
- Scout fields routinely, before and after herbicide application.
- Use multiple herbicide mechanisms of action that are effective against the most troublesome weeds in your field and against those with known resistance.
- Apply herbicides at application rates listed on the label when weeds are within the size range indicated on the label.
- Emphasize cultural practices that suppress weeds by using crop competitiveness.
- Use mechanical and biological weed management practices where appropriate.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Manage weed seed at harvest and after harvest to prevent a buildup of the weed seedbank.

# **Management of Herbicide-Resistant Biotypes**

Appropriate testing is needed to determine if a weed is resistant to Group 5 or Group 15 herbicides. Contact your Helm Agro representative or your local State Cooperative Extension Agency to determine if resistance in any particular weed biotype has been confirmed in your area, or visit on the Internet <www.weedresistancemanagement.com> or www.weedscience.org.

Specifically, glyphosate resistant weeds can be controlled or managed by applying this product in combination with herbicides labeled for control of the targeted weed in the crops specified on this label. For more information, see the "WEEDS CONTROLLED" section of this label.

Since the occurrence of resistant weeds is difficult to detect prior to use, Helm Agro accepts no liability for any losses that result from the failure of FEARLESS 5.6 L Herbicide to control resistant weeds.

Report any incidence of repeated non-performance of this product on a particular weed to your Helm Agro representative, local retailer, or county extension agent.

# 7.0 SOIL TEXTURE

Applicators should evaluate soil conditions carefully to assure that they choose the correct label rate. The use rates of this product and the other herbicides labeled for use in tank mixtures with this product vary with soil texture. Unless soil texture is specifically named, rate tables throughout this label refer to only three soil textural groups: coarse, medium and fine. The following is a complete listing of soil textures included in each of these three soil textural groups:

SOIL TEXTURAL GROUP	SOIL TEXTURE
COARSE:	sand, loamy sand, sandy loam
MEDIUM:	loam, silt loam, silt, sandy clay loam

FINE:	silty clay loam, clay loam, sandy clay, silty clay. clay

Refer to the above table to determine the corresponding soil textural group for the soil to be treated.

# 8.0 MIXING, SPRAYING AND HANDLING INSTRUCTIONS

**NOTE:** Direct contact or exposure to this product or spray mixtures of this product must be minimized. Follow instructions for transfer, mixing, cleaning or repairing equipment in order to minimize this exposure. Review the protective clothing requirements as listed in the "PRECAUTIONARY STATEMENTS" section of this label and do not use this product until you have the necessary protective clothing.

#### 2.5 Gallon Containers

Open pouring from these containers can result in exposure from splashing or spilling. Special care in lifting and pouring is strongly recommended.

#### **Bulk Containers**

Open pouring from these containers can result in exposure from splashing or spilling and is not recommended. Transfer this product from bulk containers to the mix or spray tank using pumps or transfer probes. Do not remove the probe or pump from the container or disconnect until the container is emptied and rinsed. Use the pump or probe system to rinse the empty container and transfer the rinsate directly to the mix or spray tank.

# 8.1 Equipment Cleaning and Repair

Cleaning and repair of transfer systems and application equipment is a source of exposure to this product. Care should be taken to minimize exposure during cleaning and repair of transfer systems and application equipment. Whenever possible, these systems or equipment should be rinsed before being cleaned or repaired.

When repairs must be made during transfer or application, shut down the equipment, and take special care to avoid contact with the pesticide.

# 8.2 Sprayer Compatibility

Always predetermine the compatibility of this product or labeled tank mixtures of this product with water carrier or sprayable fluid fertilizer carrier by mixing small proportional quantities in advance. See the "STANDARD SPRAYABLE FLUID FERTILIZER COMPATIBILITY TEST" section in this label to determine the compatibility of this product and the labeled tank mixtures recommended for use with sprayable fluid fertilizer carrier.

Mix this product or labeled tank mixture of this product with the appropriate carrier as follows:

- 1. Place a 20- to 35-mesh screen or wetting basket over filling port.
- 2. Through the screen, fill the sprayer tank one-half full with the appropriate carrier.
- 3. If a compatibility agent is necessary to improve mixing or to prevent the formation of undesirable and unsprayable gels or precipitates, while agitating add it to the carrier already in the tank. Use only compatibility agents cleared by FDA for this use. Read and follow all directions for use, cautionary statements and all other information appearing on the selected compatibility agent label. Check for adequate agitation.
- 4. If a wettable powder or dry flowable formulation is used, make a slurry with water and add it slowly through the screen into the tank. Continue agitation.
- 5. If a flowable formulation is used, add slowly through screen into the tank. Mixing and compatibility may be improved when flowable is premixed one part flowable with one part water and added to the tank in diluted form.

- Add this product slowly through the screen into the tank. Mixing and compatibility may be improved when this product is prediluted with two parts of water and added to the tank in diluted form.
- 7. Complete filling the sprayer tank with carrier. If a glyphosate agricultural herbicide or paraquat herbicide is used, add the required amount near the end of the filling process. Remove hose from tank immediately after filling to avoid siphoning back into the carrier source.

Maintain good agitation at all times until the contents of the tank are sprayed.

**NOTE**: If spray mixture is allowed to settle at any time, thorough agitation is required to resuspend the mixture before spraying is resumed.

Keep by-pass line on or near bottom of tank to minimize foaming. Use 50-mesh screen size in nozzle or line strainers. Carefully select proper nozzle to avoid spraying a fine mist. Check for even distribution of spray droplets. To reduce loss of the chemical due to drift of a fine mist, apply at nozzle pressures below 40 psi.

# 8.3 Standard Sprayable Fluid Fertilizer Compatibility Test

Herbicides may not always mix evenly throughout a sprayable fluid fertilizer or the components may separate too quickly to make their combined use of practical value. This may be due to certain characteristics of the different fluid fertilizers. A simple test using small quantities of the components is suggested to provide compatibility potential. The test follows:

# A. Materials Required For A Compatibility Test

- 1. Two one-quart jars with lid or stopper (marked "with" and "without")
- 2. TEAspoons (for a more exacting test, a five to ten milliliter (mL) pipette or graduated cylinder is desirable).
- 3. Sprayable fluid fertilizer to be tested.
- 4. The herbicide chemicals to be mixed.
- 5. A compatibility agent (the purpose of the adjuvant is to help keep the fertilizer and crop protection chemical in suspension, if this assistance is needed).

# **B.** Procedure

 Add one pint of the sprayable fluid fertilizer that will be used or other herbicide carrier to each jar marked "with" and "without".

manted man did mane in		
Add One Pint Liquid Fertilizer		
To Two Quart Jars.		
WITH WITHOUT		
2. To the jar marked "with", add 1/4 TEAspoon or 1.2 milliliters of a suitable compatibility agent;		

 To the jar marked "with", add 1/4 TEAspoon or 1.2 milliliters of a suitable compatibility agent; shake gently for five to ten seconds to mix. (1/4 TEAspoon in one pint is the equivalent of two pints per 100 gallons of liquid fertilizer.)

To Jar Marked "With"		
Add Compatibility Agent		
And Shake to Mix		
WITH		WITHOUT

3. To each jar add the appropriate amount of herbicide(s). If more than one is used, add them separately with the wettable powders or dry flowables added first, flowables second and liquid last. Shake gently five to ten seconds after each addition.

Add Herbicide(s) To Both Jars  And Shake to Mix				
WITH	WITHOUT			
	Amount to be Added per Pint of Sprayable Fluid Fertilizer			

			(Assuming Volume is 25 gallons/Acre)
			Level
HERBICIDE	RATE/ACRE		TEAspoons
Wettable	1 pound	=	1.5
Powders	2 pounds	=	3.0
or	3 pounds	=	4.5
Dry Flowables	4 pounds	=	6.0
	5 pounds	=	7.5

			Lev	el el	
HERBICIDE	RATE/ACRE		TEAsp	oons	Milliliters
Emulsifiable	1 pint	=	0.5	or	2.4
Concentrates or	1 quart	=	1.0	or	4.7
Flowables or	2 quarts	=	2.0	or	9.5
Liquids or	3 quarts	=	3.0	or	14.2
Solutions	1 gallon	=	4.0	or	19.0
	5 quarts	=	5.0	or	23.8

This compatibility test is designed for 25 gallons of spray per acre with the maximum labeled rate of herbicide. For changes in spray volume or herbicide rate, make appropriate changes in the ingredients of the test. Regardless of spray volume, the amount of compatibility agent should be equal to two or three pints (two pints = 1/4 TEAspoon or 1.2 milliliters, three pints = 3/8 TEAspoon or 1.8 milliliters per pint of sprayable fluid fertilizer) per 100 gallons of liquid fertilizer.

# C. Observations and Decisions

- 1. If the herbicide(s) and the sprayable fluid fertilizer are compatible.
- 2. If a compatibility agent is necessary.

Five minutes after the final addition and mixing, observe both jars for the formation of large flakes, sludge, gels or other precipitates. Observe if the herbicide(s) cannot be physically mixed with the liquid fertilizer but remains as small oily particles in the solution.

If incompatibility in any form described above occurs in the jar "with" the compatibility agent added, do not use the liquid fertilizer and the herbicide(s) together in the same spray tank.

If incompatibility as described above occurs in the jar "without" the adjuvant but not in the jar "with" adjuvant, the use of a compatibility adjuvant is recommended.

Allow both jars to stand and observe periodically for one-half hour. If the separate layers of liquid fertilizer and additives can be resuspended by shaking, commercial application is possible. An emulsifiable concentrate normally will go to the top after standing; wettable powders will either settle to the bottom of the tank or jar, or float to the top, depending upon the density of the fertilizers.

If the herbicide(s) is compatible with fluid fertilizer in the foregoing test without having to use a compatibility agent, fluid fertilizer may be used for the premixing. If it is not compatible without the compatibility agent, premix the herbicide(s) with water before adding to the spray tank.

# 9.0 APPLICATION SYSTEMS

# 9.1 Ground Broadcast Treatment

Apply this product and the labeled tank mixtures in 10 or more gallons of solution per acre using broadcast boom equipment. The carrier may be either water or sprayable fluid fertilizer as specified for the crop to be treated in the "DIRECTIONS FOR USE" section of this label. Do not apply during periods of gusty winds, when winds are in excess of 15 miles per hour or when other conditions favoring drift exist.

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels

involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

# 9.2 Ground Band Treatment

Apply a broadcast equivalent rate and volume per acre. To determine these:

Band width in inches  Row width in inches	X	Broadcast RATE per acre	=	Band RATE per acre
Band width in inches  Row width in inches	X	Broadcast VOLUME per acre	=	Band VOLUME per acre

# 9.3 Application With Dry Bulk Fertilizer

The herbicide-fertilizer impregnation process must be completed only by commercial fertilizer or chemical dealerships properly equipped for this procedure.

Dry bulk fertilizer may be impregnated with this product or the tank mixtures of this product plus atrazine on corn. This product and these tank mixtures must be applied with 200 to 450 pounds of dry bulk fertilizer per acre and shallowly incorporated within 14 days prior to planting. On mediumand fine-textured soils in areas where soil incorporation is not planned, i.e., reduced tillage situations or in some conventional tillage situations, applications can be made up to 30 days before planting to allow moisture to move the herbicide-fertilizer mixture into the soil. On coarse-textured soils, applications can be made up to 14 days prior to planting. The herbicide must be applied as directed in this label for the crop, weed and soil type treated. Refer to the table for broadcast rate per acre to determine the rate per acre for the herbicide treatment to be applied.

Impregnation of bulk fertilizer is restricted to commercial facilities. On-farm fertilizer impregnation is prohibited. No more than 500 tons of bulk fertilizer can be impregnated per day. No single facility may impregnate fertilizer with this product for more than 30 days per calendar year.

The commercial facility impregnating the dry bulk fertilizer must inform, in writing, the use (applicator) of the dry bulk fertilizer that:

- Applicators must wear long-sleeved shirt, long pants, shoes and socks.
- Do not enter or allow others to enter the treated areas (except those involved in the watering) during the restricted entry interval (REI) of 12 hours.

The following table provides a reference to determine the amount of LIQUID herbicide to be mixed per ton of dry bulk fertilizer for a range of herbicide directions for fertilizer rates per acre:

**Quarts Of Liquid Herbicide Per Acre** 

Fertilizer Rate (Pounds/Acre)	Acres Covered	Quarts of Herbicide per Ton Dry Bulk Fertilizer		
	(per ton)	1.4	1.8	2.3
		(quarts)	(quarts)	(quarts)
200	10.0	14.0	18.0	23.0
250	8.0	11.2	14.4	18.6
300	6.7	9.4	12.0	15.5
350	5.7	8.0	10.3	13.3
400	5.0	7.0	9.0	11.7
450	4.5	6.2	8.0	10.4

To determine the amount of herbicide needed for rates not included in the preceding table, use the following formula:

# **Herbicide Rate**

Mix and blend the dry fertilizer and herbicide mixture in a closed rotary drum-type mixer allowing sufficient time to ensure uniform coverage. Use at least one ton of dry fertilizer per mixing operation. Inject the herbicide into the drum over a minimum of a 2 minute period and allow at least 2 additional minutes mixing time to ensure uniformity. The nozzle used to spray the herbicide treatment must be placed inside the mixer to provide uniform spray coverage of the tumbling fertilizer.

If the dry fertilizer used has inadequate absorptive capacity, use a higher absorptive material such as Agsorb<sup>TM</sup>, MP-79<sup>TM</sup> or Microcel<sup>TM</sup>, to provide a free-flowing mixture.

The following table provides a partial list of dry fertilizers which may be impregnated with this product.

Ammonium sulfate	21-00-00
Ammonium phosphate-sulfate	16-20-00
Diammonium phosphate	18-46-00
Potassium chloride	00-00-60
Potassium sulfate	00-00-52
*Urea	46-00-00

<sup>\*</sup>Some ureas may be phytotoxic when applied on corn. Use only ureas known to be safe to corn.

**NOTE**: DO NOT impregnate this product or tank mixtures of this product with other herbicides on fertilizers containing ammonium nitrate, potassium nitrate or sodium nitrate.

Spread the herbicide-dry fertilizer mixture uniformly with a properly calibrated applicator: dribble, pneumatic (air flow) or spin. When using spin applicators, fertilizers impregnated with this product or tank mixtures of this product with other herbicides must be spread at half-rate and overlapped 100 percent to obtain full rate and uniform distribution. Non-uniform spreading of the fertilizer-herbicide mixture may result in unsatisfactory weed control or crop injury.

# 10.0 APPLICATION TIMING AND METHODS

**NOTE**: The maximum total per crop season of this product is 3.8 quarts per acre.

# 10.1 Early Preplant Surface Application

This product and some labeled tank mixtures of this product may be applied in no-till and other conservation tillage systems before weeds emerge and up to 45 days before planting field corn or silage corn. Split applications can be made 30 to 45 days prior to planting with 60 percent of the broadcast rate applied initially and the remaining 40 percent applied at planting. Applications made less than 30 days prior to planting can be made either as a split or as a single application. If weeds are present at the time of application, apply this product in a tank mixture with an appropriate contact herbicide. Observe directions for use, precautions and restrictions on the label of the contact herbicide. During the planting operation, be careful not to move untreated soil to the surface or move treated soil out of the row, as weed control may be reduced.

# 10.2 Preplant Incorporation Application

This product and many of the labeled tank mixtures may be mixed into the soil using shallow incorporation equipment any time within 14 days prior to planting. Apply the product to the soil surface as a broadcast application. Either existing soil moisture or subsequent precipitation or irrigation is required to bring incorporated herbicide treatments into contact with germinating weed seedlings. If weeds emerge after treatment, rotary hoe or shallowly cultivate immediately to

improve performance.

Shallowly incorporate the treatment into the upper 1 to 2 inches of the soil. Operate equipment at manufacturer's designed speed for incorporation to ensure adequate mixing and distribution of the herbicide treatment in the soil. Equipment design including any drag attachments must be adequate to avoid soil ridging which may result in streaked or reduced weed control. Set equipment to work the soil NO DEEPER THAN 4 INCHES. Soil conditions, including moisture content and crop residue levels, must be suitable to allow thorough and uniform mixing.

# 10.3 Preemergence Surface Application

This product and all labeled tank mixtures may be applied to the soil surface after planting and prior to either crop or weed emergence. Apply within 5 days of last preplant tillage. If weeds emerge after treatment, or if treatment is applied more than 5 days after last preplant tillage, rotary hoe or shallowly cultivate immediately to improve performance. Precipitation or overhead sprinkler irrigation is required after application to move the herbicide treatment into the weed germination zone. The amount of precipitation or overhead sprinkler irrigation required depends on existing soil mixture, soil type and percent organic matter content, but 1/4 to 3/4 inch is normally adequate. Performance is improved when moisture is received within 7 days after application and prior to weed emergence. High intensity or excessive rainfall or excessive irrigation after application may reduce control.

# 10.4 Postemergence Surface Application

This product and certain tank mixtures may be applied postemergence until corn reaches 11 inches in height. Application must be made prior to the 2-leaf grass stage or in a tank mixture that controls emerged weeds. Read and follow all restrictions and directions on tank-mix product labels. Refer to the specific treatment intended in the "DIRECTIONS FOR USE" section of the label to determine if postemergence applications to corn are permitted and determine the proper weed and corn growth stage limitations. Precipitation or overhead sprinkler irrigation is required after application to move the herbicide treatment into the weed germination zone to control unemerged weeds. The amount of precipitation or irrigation required depends on existing soil moisture, soil type and percent organic matter content, but 1/4 to 3/4 inch is normally adequate. If weeds emerge after treatment, rotary hoe or shallowly cultivate to improve performance.

DO NOT make postemergence surface applications using sprayable fluid fertilizer as the carrier because severe crop injury may occur.

# 10.5 Cultivation Information

Delay cultivation after application for as long as possible unless weeds or grasses emerge. Shallowly cultivate or rotary hoe immediately if weeds or grasses emerge. If cultivation is necessary because of soil crusting or compaction, set equipment shallow and minimize lateral soil movement to avoid dilution or displacement of the herbicide treatment. If a band application is used and weeds have emerged in the treated band, set cultivator to throw soil into the row covering the band.

# 11.0 WEEDS CONTROLLED

When applied as directed under conditions described, this product will CONTROL the following weeds:

# **11.1 Annual Grasses Controlled Barnyardgrass**

Echinocloa crus-galli

# Crabarass

Digitaria ischaemum Digitaria sanguinalis

Foxtail, giant

# Setaria faberi

Foxtail: green, robust purple, robust white Setaria viridis

Foxtail, yellow Setaria lutescens

Goosegrass
Eleusine indica

Oat, wild Avena fatua

Panicum, browntop
Panicum fasciculatum

Panicum, fall
Panicum dichotomiflorum

Rice, red Oryza sativa

Signalgrass, broadleaf Brachiaria platyphylla

Sprangletop, red Leptochloa filiformis

Wheat, volunteer Triticum aestivum

# Witchgrass

Panicum capillare

\* Apply 2.7 quarts of this product per acre to control this weed. Control of this weed can be erratic especially under dry weather conditions. Control escaped weeds with cultivation or application of an appropriate EPA-registered postemergence herbicide.

# 11.2 Annual Broadleaves Controlled Beggarweed, Florida

Desmodium tortuosum

# Carpetweed

Mollugo verticillata

# Cocklebur\*

Xanthium strumarium

# Galinsoga

Galinsoga spp.

# Groundcherry, annual

Physalis spp.

# Groundcherry, cutleaf

Physalis angulata

# Henbit

Lamium amplexicaule

# **Jimsonweed**

Datura stramonium

# Kochia\*\*

Kochia scoparia

# Lambsquarters

Chenopodium album

# Morningglory, annual\*

Ipomoea purpurea

#### Mustard

Brassica spp.

# Nightshade, black

Solanum nigrum

# Nightshade, hairy

Solanum sarrachoides

# Pigweed; Carelessweed

Amaranthus spp.

# **Purslane**

Portulaca oleracea

# Pusley, Florida

Richardia scabra

# Ragweed, common

Ambrosia artemisiifolia

# Sida, prickly; Teaweed

Sida spinosa

# **Smartweed**

Polygonum pensylvanicum Polygonum persicaria

# Velvetleaf; Buttonweed\*

Abutilon theophrasti

# Waterhemp

Amaranthus tuberculatus

- \* Use the higher rate in the rate range within each Application Rate table. Control of these weeds can be erratic especially under dry weather conditions. Control escaped weeds with cultivation or application of an appropriate EPA-registered postemergence herbicide.
- \*\* Triazine-resistant biotypes may require a post sequential application of a non-triazine herbicide for control.

# Sedge

# Nutsedge, yellow\*

Cyperus esculentus

\* Preplant incorporate for control.

# 11.3 Annual Grasses Partially Controlled

When applied immediately after planting and within 5 days of last tillage, this product at a rate of 2.3 to 2.7 quarts per acre on a broadcast basis will reduce competition from the following HARD-TO-CONTROL weeds.

# **Cupgrass**, woolly

Eriochloa villosa

# Johnsongrass, seedling

Sorghum halepense

# Millet, proso

Panicum miliaceum

# Panicum, Texas

Panicum texanum

# Sandbur; Grassbur

Cenchrus incertus

# Shattercane; Wild cane

Sorghum bicolor

# 11.4 Annual Broadleaves Partially Controlled

# Ragweed, giant

Ambrosia trifida

# Sicklepod

Cassia obtusifolia

# Sunflower, common

Helianthus annuus

**NOTE:** For hard-to-control weeds, additional amounts of FEARLESS Herbicide and/or atrazine may be added to provide improved control within the labeled rate. For more consistent control of common cocklebur, annual morningglory or velvetleaf, additional atrazine may be applied so that the total atrazine rate is at least 1.5 quarts per acre on medium-textured soil with less than 3 percent organic matter, and 1.5 to 2 quarts on medium- and fine-textured soils with 3 percent or greater organic matter content. For more consistent control of woolly cupgrass additional FEARLESS Herbicide may be applied so that the total acetochlor rate is 3.0 pounds per acre. The following table shows the amounts of FEARLESS Herbicide and/or atrazine that can be added to specific treatment rates of this product.

Do not use more than 3.8 quarts of this product per acre per calendar year, or 3.8 lbs. acetochlor plus 1.6 lbs. atrazine per acre per year.

	PRODUCT AD	DITION	
APPLICATION RATES	(maximum rate)		
FEARLESS 5.6 L Herbicide	FEARLESS	ATRAZINE	
(quarts)	(pints)	(quarts)	
1.4	2.0	1.1	
1.8	1.8	0.8	
2.3	1.3	0.5	

# 12.0 CONSERVATION OR MINIMUM TILLAGE SYSTEMS

**NOTE**: Each section of this label provides treatment rates for this product and tank mixtures including this product. Applications, which are not consistent with instructions in this label, may result in unsatisfactory weed control, injury to crops, persons or animals, or other unintended consequences. Refer to specific product labels for crop rotation restrictions and cautionary statements of all products used in these tank mixtures, including precautions on soil pH sensitive varieties, minimum re-cropping interval and rotational guidelines.

Use the higher rates in the ranges of the Application Tables in areas of heavy weed infestation or where otherwise specified. If emerged weeds exist at planting, the application of a contact herbicide or tillage is recommended when possible to eliminate existing weeds. Do not apply when conditions favor drift.

Carefully review detailed information regarding "APPLICATION SYSTEMS" and "APPLICATION TIMINGS AND METHODS" should be carefully reviewed in conjunction with the information in this section.

The tankmix recommendations in the "CONVENTIONAL TILLAGE SYSTEMS" of this label may also be followed when using "CONSERVATION OR MINIMUM TILLAGE SYSTEMS". It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

# 12.1 At-Planting Applications

When applied as directed under the conditions described, the specified tank mixtures control many emerged annual weeds, suppress many emerged perennial weeds and give preemergence control of many annual grasses and weeds when corn will be planted directly into a cover crop, established sod or in previous crop residues. These tank mixtures will not control regrowth from perennial weeds.

Refer to specific product labels for crop rotation restrictions and precautionary statements of all products used in these tank mixtures. For mixing instructions, see the "MIXING AND SPRAYING INSTRUCTIONS" section of this label.

# 12.1.1 Additional Preemergence Control

FEARLESS 5.6 L Herbicide may be tank mixed with Princep or Pursuit. Apply these tank mixtures with a glyphosate agricultural herbicide or 2,4-D (amine or low volatile ester) in 10 to 20 gallons of water or 10 to 60 gallons of nitrogen solution per acre, or these tank mixtures with paraquat herbicide in 20 to 60 gallons of water or clear liquid fertilizer per acre immediately before, during or after planting, but BEFORE CROP EMERGENCE. As density of stubble, crop residue or weeds increase, increase spray gallonage and rate within the labeled use rate ranges to ensure complete coverage. In the absence of emerged vegetation, delete the glyphosate agricultural herbicide, paraquat herbicide or 2,4-D portion of these tank mixtures. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

# 12.2 Control or Suppression of Emerged Weeds

**ATTENTION: AVOID DRIFT**. EXTREME CARE MUST BE USED WHEN APPLYING THESE TANK MIXTURES TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS. Do not allow spray mist to drift since even minute quantities of spray can cause severe damage or destruction to nearby crops, plants or other areas on which treatment is not intended. Do not apply when winds are gusty or in excess of 5 miles per hour or when other conditions, including lesser wind velocities, will allow drift to occur. When spraying, avoid combinations of pressure and nozzle type that will result in fine particles (mist) which are more likely to drift.

# 12.2.1 Glyphosate Agricultural Herbicides Annual Weeds

Apply glyphosate agricultural herbicides in these tank mixtures at the proper rate for the weed per the label instructions. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

#### **Perennial Weeds**

At normal application rates in minimum tillage systems, perennial weeds may not be at the proper stage of growth for control. Use labeled rates of glyphosate agricultural herbicides, in the above mixtures under these conditions provides top kill and reduces competition from many emerged perennial grasses and broadleaf weeds.

DO NOT USE THIS MIXTURE FOR BERMUDAGRASS OR JOHNSONGRASS CONTROL.

# **Ammonium Sulfate**

The addition of ammonium sulfate in the spray solution may increase the performance of glyphosate agricultural herbicide tank mixtures on emerged annual weeds under adverse growing conditions. When using ammonium sulfate, add 2 percent dry ammonium sulfate by weight or 17 pounds per 100 gallons of water. Add ammonium sulfate to the water in the spray tank and completely dissolve prior to adding the herbicide or surfactant. Do not mix ammonium sulfate in fluid fertilizer solutions. The equivalent rate of ammonium sulfate in a liquid formulation may also be used.

If ammonium sulfate is added directly to the spray tank, add slowly with agitation. Adding too quickly may clog outlet lines. Nozzle tip plugging may result from the use of low quality ammonium sulfate. To determine quality, perform a jar test by adding 1/3 cup of ammonium sulfate to 1 gallon of water and agitate for one minute. If undissolved sediment is observed, predissolve the ammonium sulfate in water and filter prior to adding to the spray tank.

# **Surfactants**

Nonionic surfactants that are labeled for use with herbicides may be used with some glyphosate agricultural herbicides check specific label for restrictions. Do not reduce rates of glyphosate agricultural herbicides when adding surfactant. Use 0.5 percent surfactant concentration (2 quarts per 100 gallons of spray solution) when using surfactants that contain at least 50 percent active ingredient or a 1 percent surfactant concentration (4 quarts per 100 gallons of spray solution) for those surfactants containing less than 50 percent active ingredient. Read and carefully observe surfactant cautionary statements and other information appearing on the surfactant label.

# 12.2.2 Paraquat Herbicides

When used as directed, paraquat herbicides in a labeled tank mixture control many emerged annual weeds and suppresses many emerged perennial weeds.

# **Broadcast Treatment**

Apply paraquat herbicide in the specified tank mixtures immediately before, during or after planting but BEFORE CROP EMERGENCE. Use the rates and timing of application listed in the specific product label. As density of stubble, crop residue or weeds increases, increase spray gallonage within the labeled use rate range for complete coverage. Add a nonionic spreader surfactant

(approved for use on crops) containing at least 75 percent surfactant active agent at 8 ounces per 100 gallons of diluted spray.

REFER TO THE SPECIFIC PARAQUAT HERBICIDE LABEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

# 12.2.3 2.4-D

When used as directed, 2,4-D in labeled tank mixtures controls many emerged annual and perennial broadleaf weeds. For emerged weeds controlled, see the "WEEDS CONTROLLED" section of the label for 2,4-D.

#### **Broadcast Treatment**

Apply 1 to 2 pints of 2,4-D (amine or low-volatile ester) in the specified tank mixtures. Applications should be made 7 to 14 days before planting or 3 to 5 days after planting but BEFORE CORN EMERGES. As density of stubble, crop residue or weeds increase, spray gallonage should be increased within the use rate range for complete coverage. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

DO NOT use 2,4-D on light, sandy soils, or where soil moisture is inadequate for normal weed growth. Observe all precautions and limitations on the 2,4-D label booklet.

# 12.3 Early Preplant Application

This product, when applied in a single application or split application will provide preemergence control or reduced competition of the annual grasses and broadleaf weeds listed in the "WEEDS CONTROLLED" section of this label. If emerged weeds are present at the time of treatment, a glyphosate agricultural herbicide, paraquat herbicide or 2,4-D should be added to this product according to the directions for use on their respective product labels. If unsatisfactory weed control occurs (due to excessively dry or excessively wet conditions) following the earlier application, a postemergence application of an appropriate labeled grass and/or broadleaf weed herbicide may be used. If a postemergence treatment includes the herbicide used early preplant, do not exceed the labeled rate for corn on a given soil texture. Observe all precautions and limitations on the labels for FEARLESS 5.6 L Herbicide, glyphosate agricultural herbicides, paraquat herbicides, 2,4-D and other postemergence herbicides before use of these products.

DO NOT apply tank mixtures containing a glyphosate agricultural herbicide, paraquat herbicide or other contact herbicides by air.

This product, when applied in a single application or split application (alone or in a tank-mix combination with Princep) or as a sequential application to Princep in early preplant programs will provide preemergence control or reduced competition of the annual grasses and broadleaf weeds listed in the "WEEDS CONTROLLED" section of this label. If weeds are emerged at time of application, apply a labeled contact herbicide with this product. Observe the directions for use, precautions and restrictions on the label of the contact herbicide.

12.3.1 FEARLESS 5.6 L Herbicide Approved Application Systems

Ground; Broadcast boom
Dry Bulk Fertilizer Impregnation

# **Approved Application Methods**

# Single application

Application of this product should be made less than 30 days before planting but prior to weed emergence. On coarse-textured soils applications should not be made more than 2 weeks prior to planting.

# Split application

Apply 60 percent of the full rate as a split application prior to weed emergence and no more than 45 days prior to planting and the remaining 40 percent at or immediately following planting but before crop emergence.

See the following table for broadcast rates per acre for single and split applications.

# **Application Rates:**

	Broadcast Rate Per Acre
SOIL TEXTURAL	FEARLESS 5.6 L Herbicide *
GROUP	(quarts)
Coarse	1.7 to 2.3
Medium	2.3 to 3.0
Fine	2.3 to 3.0

<sup>\*</sup> In areas of heavy weed infestation use the higher rate per acre.

In order to provide broad-spectrum weed control, both single and split applications of this product must be followed with a planned postemergence application of a labeled broadleaf and/or grass herbicide. Observe the directions for use, precautions and restrictions on the label of the postemergence herbicide before use of these products.

**NOTE**: Do not exceed a total of 1.6 pounds of atrazine per acre on highly erodible soils with less than 30 percent plant residue cover. If emerged weeds exist at planting, the application of a contact herbicide or tillage is recommended when possible to eliminate existing weeds.

# 12.3.2 FEARLESS 5.6 L Herbicide following Princep

# Sequential application

Application of this product following Princep should be utilized for the control of fall panicum, crabgrass or broadleaf signalgrass. Apply 1 to 1.25 quarts per acre of Princep prior to weed emergence and no more than 45 days prior to planting. At or immediately following planting, but BEFORE CROP EMERGENCE, apply the indicated rate of this product.

# Application Rates:

	Broadcast Rate per Acre
SOIL TEXTURAL	FEARLESS 5.6 L
GROUP	Herbicide *
	(quarts)
Coarse	1.5 to 1.7
Medium	1.8 to 2.3
Fine	1.8 to 2.3

<sup>\*</sup> Use the higher rates in the use rate ranges in areas of heavy weed infestation.

**NOTE**: Do not exceed a total of 1.6 pounds of atrazine per acre on highly erodible soils with less than 30 percent plant residue cover. If emerged weeds exist at planting, the application of a contact herbicide or tillage is recommended when possible to eliminate existing weeds.

Land treated with Princep should not be planted to any crop except corn for one year following treatment as crop injury may occur. After harvest of treated crop, plow and thoroughly till the soil in the fall or spring to minimize possible injury to spring seeded rotational crops.

If emerged weeds exist at planting, the application of a contact herbicide or tillage is recommended when possible to eliminate existing weeds. If emerged weeds exist at planting, the application of a contact herbicide or tillage is recommended when possible to eliminate existing weeds.

# 13.0 CONVENTIONAL TILLAGE

Use the higher rates in the application rate ranges in areas of heavy weed infestation or where otherwise specified. If emerged weeds exist at planting, the application of a contact herbicide or tillage is recommended when possible to eliminate existing weeds. Do not apply when conditions favor drift.

Detailed information regarding "APPLICATION SYSTEMS" and "APPLICATION TIMING AND METHODS" should be carefully reviewed in conjunction with the information in this section. If the specific information in this section differs from the "PRODUCT INFORMATION", the specific information should control.

# 13.1 FEARLESS 5.6 L Herbicide

Apply this product in water or sprayable fluid fertilizer solution for control of yellow nutsedge and the annual grasses and broadleaf weeds listed in the "WEEDS CONTROLLED" section of this label.

# **Approved Application Systems**

Ground: Broadcast boom; banded Dry Bulk Fertilizer Impregnation

# **Approved Application Methods**

**Preplant Incorporated; Preemergence Surface** 

# **Postemergence Surface**

Add up to 1 pint per acre of 2,4-D as a tank-mix partner to aid in control of existing weeds. Some leaf burn to corn may occur occasionally but subsequent growth or yield should not be affected. DO NOT make postemergence surface applications using sprayable fluid fertilizer as the carrier because severe crop injury may occur. Read and follow all labeled directions for use for 2,4-D.

# **Application Rates:**

	Broadcast Rate per Acre		
SOIL TEXTURAL	Less than 3% Organic Matter	More than 3% Organic Matter	
GROUP	(quarts)	(quarts)	
Coarse	1.4	1.7	
Medium	1.7 to 2.4	2.3 to 2.6	
Fine	2.3 to 2.6	2.3 to 3.0	

**NOTE:** In. areas. of heavy weed infestations use up to 2.3 quarts of this product per acre on coarse-textured soils and 2.3 to 3.0 quarts of this product per acre on medium- and fine-textured soils. Do not exceed 2.5 quarts of Fearless 5.6L Herbicide per acre on highly erodible soils with less than 30 percent plant residue cover.

# 13.2 FEARLESS 5.6 L Herbicide plus Glyphosate Agricultural Herbicides on Corn containing Roundup Ready® 2 Technology including Roundup Ready Corn 2

This program may be used preemergence and postemergence to corn containing Roundup Ready 2 Technology including Roundup Ready Corn 2 from seedling emergence until the corn reaches 11 inches in height. Refer to the glyphosate agricultural herbicide labels for specific weeds controlled postemergence.

AVOID DRIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS TANK-MIX TO PREVENT INJURY TO DESIRABLE PLANTS AND CROPS WHICH DO NOT CONTAIN A GLYPHOSATE TOLERANCE GENE.

# **Approved Application Systems**

Ground: Broadcast boom

**Approved Application Methods** 

**Preemergence Surface** 

**Sequential Program** This product may be applied preemergence to corn containing Roundup Ready 2 Technology including Roundup Ready Corn 2 at the ROUNDUP READY RATE of 1.2 quarts per acre in a planned preemergence followed by a glyphosate agricultural herbicide postemergence sequential program.

# **Postemergence Surface**

This product may be applied postemergence to corn containing Roundup Ready 2 Technology including Roundup Ready Corn 2 from seedling emergence until the corn is 11 inches in height. The ROUNDUP READY RATE for this product is 1.2 quarts per acre. Labeled use rates for this tank-mix using a Roundup agricultural herbicide are defined in the table below. This tank mix with a glyphosate agricultural herbicide should be applied when weeds are 2 to 4 inches in height and before the weed height and/or density become competitive with the crop.

For difficult to control weeds such as fall panicum, barnyardgrass, crabgrass, shattercane, broadleaf signalgrass and Pennsylvania smartweed use the maximum labeled rates of glyphosatep agricultural herbicides. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

**ROUNDUP READY RATE – FEARLESS 5.6 L Herbicide at 1.5 quarts per acre.** 

Application Rates (minimum and maximum range):

	Broadca	Broadcast Rate Per Acre		
SOIL TEXTURAL GROUP	FEARLESS 5.6 L Herbicide (quarts)	GLYPHOSATE + AGRICULTURAL HERBICIDES		
Coarse	1.0 to 2.9	Per Labeled Rate		
Medium	1.0 to 3.7	Per Labeled Rate		
Fine	1.0 to 3.7	Per Labeled Rate		

# 14.0 TANK-MIXUTRES

# 14.1 FEARLESS 5.6 L Herbicide Tank-Mixtures for Preemergence Use in Corn

This product may be tank-mixed with the following products for preemergence use in corn. Ensure that the specific product being used in the tank mixture is registered for application preemergence to corn. Read and follow label directions of all products in the tank mixture. The most restrictive label directions apply.

[Insert active ingredient(s) or brand name of product(s) containing the following active ingredient(s) that, at the time of printing, are registered for use preemergence in corn:

Aim EC, Argos, Balance Flexx, Banvel, Callisto, Clarity, Distinct, Helosate Plus Advanced, Hornet WDG, Impact, Linex 4L, Lorox DF, Marksman, Resource, Roundup Brand Agricultural herbicides, 2,4-D, (atrazine, carfentrazone-ethyl, clopyralid, dicamba, diflufenzopyr, flumetsulam, flumiclorac pentyl ester, glyphosate, isoxaflutole, linuron, mesotrione, topramezone)].

# 14.2 FEARLESS 5.6 L Herbicide Tank-Mixtures for Postemergence Use in Corn

This product may be tank-mixed with the following products for postemergence use in corn. Ensure that the specific product being used in the tank mixture is registered for application postemergence (in-crop) to corn. Read and follow label directions of all products in the tank mixture. The most restrictive label directions apply.

[Insert active ingredient(s) or brand name of product(s) containing the following active

ingredient(s) that, at the time of printing, are registered for use postemergence to corn:

Aim EC, Argos, Balance Flexx, Banvel, Callisto, Clarity, Distinct, Helosate Plus Advanced, Hornet WDG, Impact, Linex 4L, Lorox DF, Marksman, Resource, Roundup Brand Agricultural herbicides, 2,4-D, (atrazine, carfentrazone-ethyl, clopyralid, dicamba, diflufenzopyr, flumetsulam, flumiclorac pentyl ester, glyphosate, isoxaflutole, linuron, mesotrione, topramezone)].

# 15.0 MISCANTHUS AND OTHER NON-FOOD PERENNIAL BIOENERGY CROPS

For weed control in Miscanthus and other non-food perennial bioenergy crops, apply FEARLESS 5.6 L Herbicide at 2.1-3.8 pints per acre (after the crop has been transplanted or after fully emerged to a height of at least 2-3 inches).

# **RESTRICTIONS:**

Do not allow the Miscanthus or other non-food perennial bioenergy crop treated with FEARLESS 5.6 L Herbicide to be grazed or used as animal feed.

Up to two applications of FEARLESS 5.6 L Herbicide may be made each year. The total amount of this product applied each year must not exceed 7.6 pints per acre.

# **16.0 LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

Follow Directions for Use of this product carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of Helm Agro US, Inc. or Seller. To the extent of applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold Helm and Seller harmless for any claims relating to such factors.

Helm warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or Helm, and Buyer and User assume the risk of any such use. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, HELM MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

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agreement signed by a duly authorized representative of Helm.

# Manufactured for:

HELM AGRO Inc. 401 E. Jackson St., Suite 1400

Note: Roundup Ready is a registered trademark of Monsanto Technology LLC